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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Power, D. et al.  
Serial No.: 10/667,296

Art Unit : 3672  
Examiner : Coy, N.  
Docket No.: 061459 303139

Filed : 9/17/2003  
Title : Automatic Drilling System

Mail Stop Amendment  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**Declaration of Ertugrul Akmese**

Sir:

Ertugrul Akmese declares that:

I have a Master of Science degree in Industrial and Management Engineering from Montana State University, Bozeman Montana, granted in 1993, and a Bachelor of Science degree in Industrial Engineering from Middle East Technical University, Ankara, Turkey, granted in 1990. I have worked in the technical field of automation and process control for thirteen years beginning in 1990. I am currently working as a consulting engineer to Noble Engineering & Development Ltd., the assignee of the present patent application. I am familiar with the subject matter of the present patent application and the prior art references cited in the Office Action of December 6, 2005.

I believe that U.S. Patent Application Publication No. 2004/0226748 filed by Prior et al. does not show an "electric servo motor arranged to operate a winch brake control" as the Examiner has stated in the December 6, 2005 Office Action, because a "motor" disclosed in that publication is not what is commonly understood as an "electric servo motor." An electric servo motor, as that term is understood in the field of automation, is a device capable of imparting a very precisely

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controlled amount of angular displacement or rotation to its output shaft, thereby being able to precisely control the motion of anything ultimately coupled to the output shaft. Such precise motion control is performed by applying a suitable control signal to a control signal input on the servo motor. An electric servo motor to which the appropriate control signal is applied will maintain its angular position as long as the same control signal is applied, changing orientation only when the control signal changes.

A "servo motor" is therefore quite different from the "motor" shown by reference numeral 55 in the drawings of the Prior et al. patent application publication. The motor shown in the prior met al. publication is merely used to apply rotary torque to a winch on a drilling rig. A motor in the sense as it is used in Prior et al. will continue to apply rotary torque as long as it remains energized or powered. Therefore, the motor shown in Prior et al. will continue to rotate the winch drum as long as electrical power is supplied, or unless the counteracting torque provided by the drawworks brake is sufficient to overcome the motor torque. It should also be noted that the Prior et al. publication describes the motor as follows: "the drawworks 50 includes one or more motor(s) 55, such as an electrical, diesel or other appropriate motor...." To my knowledge, a diesel engine or motor does not have the capability of serving the purpose of a servo motor.

I also believe that the Prior et al. publication does not show "measuring a parameter related to operating position of a drawworks brake" as stated in claim 17 of the present patent application. Measuring such a position would require a sensor having its input couple to some part of the braking system whose position was related to the operating position of the brake. In the brake system shown in the Prior et al. publication, the brake is operated by a device such as a pneumatic cylinder coupled to air pressure. However, there is no sensor coupled to the actuator or any other portion of the brake control system. The three reference sensors in the Prior et al. publication are a torque sensor responsive to torque exerted by the top drive or rotary table, a load sensor responsive to tension on the dead line (and thus related to the pull on the reaming tool) and a sensor responsive to rotational motion of the winch drum. In the claimed invention,

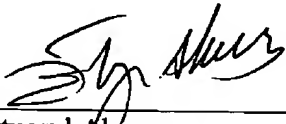
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the act of "measuring a parameter related to operation position of a winch brake...." can be performed by an encoder coupled to the servo motor, and such is shown in one illustrated embodiment. No such sensor is shown in the Prior et al. publication, and lacking such sensor, it is not possible to make the claimed measurement.

All statements made herein of my own knowledge are true, and all statements made on information and belief are believed to be true. Further, these statements are made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

Date signed: 12/27/05

  
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Ertugrul Akmes

**FACSIMILE COVER SHEET**

**TO:** Examiner Nicole Coy, U.S. Patent and Trademark Office  
**FROM:** Richard A. Fagin  
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